CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 87-17

WASTE DISCHARGE REQUIREMENTS FOR:
PACIFIC GAS AND ELECTRIC COMPANY
PITTSBURG POWER PLANT
CLASS I AND II SURFACE IMPOUNDMENTS

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. Pacific Gas and Electric Company (hereinafter called the Discharger), owns and operates Pittsburg Power Plant located west of the town of Pittsburg in Contra Costa County. The plant has seven natural gas or oil fired generating units with a combined capacity of 2002 megawatts. Wastewaters from operation and maintenance of the facility are stored and treated in five Class I hazardous waste and two Class II designated waste surface impoundments on site.

2. The Discharger originally submitted a Report of Waste Discharge (ROWD) on January 25, 1985 for issuance of waste discharge requirements for the continued operations of the surface impoundments at its Pittsburg Power Plant. The ROWD was considered incomplete and supplemental materials were submitted on May 1, 1985 and November 6, 1985. The November 6, 1985 submittal was the Discharger's Part B application (Part B) pursuant to the Resources Conservation and Recovery Act (RCRA). The ROWD was considered complete on September 12, 1986 when the correct filing fee was submitted.

3. The Board has issued Waste Discharge Requirements for this facility's discharge to surface waters under the National Pollutant Discharge Elimination System, Order No. 83-22. The permit has been amended twice by Order Nos. 84-15 and 86-47. The Board has not previously issued Waste Discharge Requirements for the Class I and II surface impoundments.

4. The five RCRA regulated Class I hazardous waste surface impoundments are as follows:

   a. Boiler Chemical Cleaning Solution Pond (BCCSP)

      The BCCSP is constructed of three inches of reinforced concrete and lined with 80 mils of PVC. This was built in 1970. It is used for storage of waste boiler chemical cleaning solutions. This waste contains metal ions and is corrosive. Sodium hydroxide is added to the waste prior to entering the pond to raise the pH above 2. If necessary, additional sodium hydroxide is added to the pond to precipitate heavy metal hydroxides. The liquid supernatant is filtered, then discharged along with plant once-through cooling water to Suisun Bay in compliance with the NPDES Permit No.

CA0004880. The sludge is transported to an off-site Class I facility by a licensed hazardous waste transporter.

b. Boiler Chemical Cleaning Rinse Pond (BCCRP)

The BCCRP and BCCSP were once a single pond. A partition was erected in the original pond to create the two present ponds in 1984. The BCCRP is used to treat rinse water from the chemical cleaning of the boilers. The constituents in this pond are the same as those found in the BCCSP except in diluted concentrations. The treatment and disposal of the rinse waste is identical to that of the BCCSP waste.

c. Air Preheater Wash Pond (APWP)

The APWP is constructed of three inches of concrete and lined with 80 mils of PVC. The pond was also built in 1970. This pond is used for treating air preheater, fireside and stack washes. The waste contains solids which accumulate on the surfaces of these components, including metal ions. The waste is corrosive. Treatment consists of settling the solids and disposing of them at a Class I facility. The supernatant is discharged in compliance with the NPDES Permit No. CA0004880.

d. Oil Sludge Pond (OSP)

The OSP is constructed of three inches of concrete and is a part of the oily water treatment system. It was built in 1953. The system receives wastewater from drains of the power block. The oil and sludge which are separated in the treatment process are stored in the OSP until they are transported to a Class I site by a licensed hazardous waste transporter. The waste contains dissolved metals, fuel oil residuals, and trace organics.

e. Demineralizer Neutralization Pond (DNP)

The DNP is constructed of three inches of concrete and lined with 30 mils of Hypalon. It was built in 1979. The regenerant wastes from the cation/anion demineralizer system are neutralized as they enter the pond. The wastes are considered corrosive. The effluent is discharged with the once-through cooling water in compliance with the NPDES Permit No. CA0004880.

5. The two Class II designated waste surface impoundments are as follows:

a. Clarifier Sludge Pond (CSP)

The CSP has three inch concrete walls and a compacted clay bottom. It was built in 1953. The pond is used for settling sludge from the water treatment clarifier and building drains effluents. Supernatant is discharged in compliance with the NPDES Permit No. CA0004880. The waste contains trace dissolved metals, aluminum sulfate, polyelectrolyte, and river water sediments.

b. Oily Water Collection Pond (OWCP)

The OWCP is constructed of four inches of concrete. It was built in 1979. The OWCP is the first unit of the oily water treatment system. The pond receives oily wastewater from building drains, fuel oil tanks, containment area, and yard runoff. The collected wastewater flows to an API separator and a dissolved air flotation tank. The resultant oily sludge is discharged to the OSP. The treated effluent is discharged to an effluent pond, which subsequently discharges with the once-through cooling water in compliance with NPDES Permit No. CA0004880.

6. The discharger indicated in a letter dated February 25, 1986 that the OSP will be closed before June 30, 1988. A closure plan for this pond was submitted on November 8, 1985 as part of the Part B application for a final operating permit. The plan is not acceptable because it is vague and because it proposes to discharge rinse water to Suisun Bay.

7. A Comprehensive Groundwater Monitoring Evaluation (CME) of the hazardous waste facilities was transmitted to the Discharger on June 30, 1986. The evaluation found that the groundwater monitoring program was deficient. The deficiencies included an insufficient definition of the hydrogeology under the site, the lack of monitoring of the shallow water table, and an inadequate sampling and analysis plan.

8. The Discharger submitted a proposed scope of work to investigate and remedy the deficiencies in the groundwater monitoring program in a letter dated June 27, 1986. Details of the work were discussed and agreed on in a letter from the Board's Executive Officer dated August 1, 1986 and a letter from the Discharger dated August 29, 1986.

9. The hydrogeologic investigations will not be completed until the end of 1987. However, because the Discharger has yet to adequately define the hydrogeology under the site and to implement an acceptable groundwater monitoring system, it is necessary to accelerate the effort to achieve compliance. Therefore, interim determinations and reports should be submitted before all the studies have been completed. It is recognized that the interim determinations may be changed to reflect new information gathered from the continuing studies.

10. Section 25208.4 (a) of the California Health and Safety Code (Toxic Pits Cleanup Act of 1984) requires that on or after June 30, 1988, no person shall discharge liquid hazardous wastes or hazardous wastes containing free liquids into a surface impoundment if the surface impoundment, or the land underneath it, contains hazardous wastes and is within one-half mile upgradient of a potential source of drinking water. Section 25208.2 (f) of the California Health and Safety Code defines "discharge" to include storage of liquid hazardous wastes or hazardous waste containing free liquids. Section 25208.4 (b) allows the Discharger to apply to the Board for an exemption from subsection (a) by January 1, 1986. The Board must either grant or deny the

exemption by December 31, 1987. The Discharger has applied for exemptions from this section for the BCCSP, BCCRP, APWP, and OSP.

11. Section 25208.4 (c) of the California Health and Safety Code (Toxic Pits Cleanup Act of 1984) requires that a person shall not discharge any restricted wastes into a surface impoundment unless the person is granted an exemption pursuant to Section 25208.16. The application for an exemption was due by March 1, 1986. The Discharger has applied for exemptions from this section for the BCCSP, BCCRP, and APWP.

12. Section 25208.5 (a) of the California Health and Safety Code (Toxic Pits Cleanup Act of 1984) requires that on or after January 1, 1989, no person shall discharge liquid hazardous wastes or hazardous wastes containing free liquids into a surface impoundment unless the surface impoundment is double lined, equipped with a leachate collection system, and groundwater monitoring is conducted. Section 25208.5 (c) allows the Discharger to apply to the Board for an exemption from subsection (a) by January 1, 1986. The Board must make a determination by June 30, 1988. The Discharger has applied for exemptions from this section for the BCCSP, BCCRP, APWP, and OSP.

13. The hazardous waste surface impoundments must be modified and operated to comply with requirements of Title 23, Chapter 3, Subchapter 15 of the California Administrative Code which became effective November 26, 1984 (Subchapter 15). Sections 2510 (b) and (c) of Subchapter 15 state that the Discharger may request the Board to grant exemptions from specific requirements if particular criteria are met.

14. The Discharger demonstrated in the Part B application compliance with specific sections of Subchapter 15 as follows:

Section	Description	Surface Impoundments
2530(d)	foundations supporting containment structures withstand effects of settlement, uplift, and compression	all surface impoundments
2531(c)	outside of 100-year floodplain	all surface impoundments
2548(a)	two feet freeboard	BCCSP, BCCRP, APWP, OSP
2548(c)	prevent overfilling	all surface impoundments
2548(e)	prevent scouring at point of disharge and at waterline	all surface impoundments

15. The Discharger certified in the Part B application that the existing containment structures can withstand ground accelerations associated with a maximum credible earthquake without damage. The Board's staff has reviewed the certification and has found that the conclusion has not been substantiated with data. In particular, the limited data

available indicate that a potential may exist for liquifaction in the event of earthquakes. Therefore, the Discharger must demonstrate with sufficient supporting data that the containment structures can indeed withstand a maximum credible earthquake to satisfy Sections 2547 of Subchapter 15.

16. The specifications and provisions of this Order are designed to bring the facility into full compliance with Subchapter 15 requirements.

17. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on July 21, 1982. The Basin Plan contains water quality objectives for groundwaters and Suisun Bay and its contiguous waters.

18. The beneficial uses of Suisun Bay and contiguous water bodies are:

    * Municipal and Domestic Supply
    * Industrial Service Supply
    * Navigation
    * Water Contact Recreation
    * Non-contact Water Recreation
    * Commercial and Sport Fishing
    * Wildlife Habitat
    * Preservation of Rare and Endangered Species
    * Fish Migration
    * Fish Spawning
    * Estuarine Habitat

19. The actual and potential beneficial uses of local groundwaters are:

    * Industrial Process Water
    * Industrial Service Supply
    * Municipal and Domestic Supply
    * Agricultural Supply

20. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21000 of Division 13) of the Public Resources Code (CEQA) pursuant to Section 15301 of the California Administrative Code.

21. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

22. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED THAT Pacific Gas and Electric Company, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Prohibitions

1. The discharge of any waste from the surface impoundments to groundwaters of the State is prohibited.

2. The discharge of any waste from the surface impoundments to any surface waters of the State is prohibited unless permitted under the National Pollutant Discharge Elimination System.

3. The storage and treatment of hazardous waste shall not create a nuisance or pollute State waters as defined in Section 13050 (l) and (m), respectively, of the California Water Code.

4. There shall be no discharges to a surface impoundment in the event of any containment system failure which causes a threat to water quality.

B. General Specifications

1. The waste management units shall prevent migration of wastes to adjacent geologic materials, groundwater, or surface water, throughout the operation, closure, and post-closure periods.

2. The surface impoundments shall be operated to ensure that wastes will be a minimum of five feet above the highest anticipated elevation of underlying groundwater.

3. All waste management units shall have foundations capable of supporting the containment structures and capable of withstanding hydraulic pressure gradients to prevent failure due to settlement, compression, or uplift.

4. The materials used for containment structures shall have appropriate chemical and physical properties to ensure containment of wastes at all times. Liner permeabilities shall be determined relative to the liquids contained in the respective ponds and shall be determined by appropriate field tests methods in the accordance with accepted civil engineering practice. Earthen materials used in containment structures shall meet the specifications given in Section 2541 (d) of Subchapter 15.

5. The waste management units shall be designed and constructed to withstand ground accelerations associated with the maximum credible earthquake without damage to the foundation, the containment structures, and other structures which control leachate, surface drainage, or erosion.

6. The containment structures shall be designed by and construction directly supervised and certified by a registered civil engineer or a certified engineering geologist. Facilities shall receive approval of the construction by the Board staff before use of the facility commences.

7. A report shall be filed with the Board which provides operation levels and waste input quantities permitted each month based on anticipated precipitation and on past precipitation conditions for the year. It shall also demonstrate that the freeboard requirements will be maintained at all times.

8. Direct pipeline discharge to surface impoundments shall be either equipped with devices or shall continue to have fail-safe operating procedures to prevent overfilling.

9. The surface impoundments shall be designed, constructed, and operated to prevent scouring of containment structures at points of discharge into the impoundments and by wave action at the waterline.

10. All technical submittals shall be prepared under the direct supervision of and certified by a registered civil engineer or a certified engineering geologist.

11. If the Board determines that exemptions to Sections 25208.4 (a), 25208.4 (c), and/or 25208.5 (a) of the California Health and Safety Code should not be granted, the Discharger shall modify and/or close the hazardous waste surface impoundments according to a schedule that will ensure compliance with the corresponding dates given in the statute.

C. Specification for Class I Surface Impoundments

1. The Class I hazardous waste surface impoundments shall have double liners. The outer layer shall be a clay liner and the inner layer may either be a clay or synthetic liner. The liners shall meet the specifications given in Sections 2541 (e) and 2542 of Subchapter 15.

2. The Class I hazardous waste surface impoundments shall be equipped with blanket type leachate collection and removal systems. The systems shall meet the specifications given in Section 2543 of Subchapter 15.

3. The Class I waste management units shall be designed and constructed to prevent inundation, erosion, slope failure, and washout under conditions of probable maximum precipitation.

4. The BCCSP, BCCRP, APWP, and OSP shall be operated to accommodate seasonal precipitation of a 100 year return frequency season and probable maximum precipitation conditions to prevent overtopping. In any case, a minimum of two feet freeboard shall be maintained in each pond at all times.

5. The DNP shall be operated to accommodate seasonal precipitation and probable maximum precipitation conditions to prevent overtopping. In any case, a minimum of two feet freeboard shall be maintained in each pond at all times.

6. The Class I waste management units shall be immediately underlain by natural geologic materials which have a permeability of not more than 10^{-7} cm/s and which are of sufficient thickness to prevent vertical movement of waste.

7. A closure plan shall be submitted for the OSP in accordance with Sections 2580, 2582, and 2597 of Subchapter 15.

D. Specifications for Class II Surface Impoundments

1. The Class II surface impoundments shall be equipped with liners which meet the specifications given in Sections 2541 (e) and 2542 of Subchapter 15.

2. The Class II surface impoundments shall be equipped with blanket type leachate collection and removal systems if they are double lined. The systems shall meet the specifications given in Section 2543 of Subchapter 15.

3. The Class II waste management units shall be designed and constructed to prevent inundation, erosion, slope failure, and washout under conditions of a 24 hour storm with a 1000 year return frequency.

4. The CSP and the OWCP shall be operated to accommodate seasonal precipitation of a 10 year return freguency season and precipitation conditions of a 24 hour storm with a 1000 year return frequency to prevent overtopping. In any case, a minimum of two feet freeboard shall be maintained in each pond at all times.

E. Specifications for Hydrogeologic Investigation

1. The Discharger shall complete the following tasks to define the hydrogeology at the facility, and assess and modify the existing groundwater monitoring system:

    a. Identify the uppermost aquifer and interconnections between the water bearing units within the aquifer.

    b. Determine tidal and seasonal variations in groundwater gradients.

    c. Determine the potential for vertical migration of contaminants. This includes defining vertical groundwater gradients.

    d. Establish interim water quality protection standards for the groundwater. This may include establishing a background well(s) on site to determine initial background groundwater quality. If so, the groundwater monitored by the well(s) must be unaffected by the surface impoundments.

    e. Define the interim points of compliance around the waste management units.

f. Determine the potential for contaminants to migrate above the shallow clay unit.

g. Determine the extent and source of hydrocarbons found in soil samples.

2. The Discharger shall monitor the unsaturated zone in the areas of the waste managment units in accordance with Section 2559 of Subchapter 15.

F. Provisions

1. The Discharger shall comply with Prohibitions A.1 through A.4, Specifications B.1, B.3, B.6, B.8, B.9, B.10, B.11, and C.4 immediately.

2. The Discharger shall comply with the following Specifications according to the schedules given below:

Specification	Document compliance, submit plan and schedule to achieve compliance, or apply for exemption	Achieve and document compliance if not done already
B.4 C.1, C.2, C.6, C.7 D.1, D.2 E.2	May 1, 1987	By dates to be specified by the Executive Officer
B.2, B.5, B.7 C.3, C.5 D.3, D.4	August 1, 1987	By dates to be specified by the Executive Officer

3. The tasks described in Specification E.1 shall be completed according the following schedule:

TASK	COMPLETION DATE
a.	November 1, 1986
b.	November 1, 1987
c.	January 15, 1987
d.	July 8, 1987
e.	July 8, 1987
f.	February 15, 1987
g.	March 15, 1987

4. A report documenting the completion of Specification E.1 (a), (c), and (f) shall be submitted by April 1, 1987. All raw data used to support the conclusions shall be included. The original field drilling logs shall also be included as an appendix. The report shall be prepared

under the direct supervision of and certified by a registered civil engineer or certified engineering geologist.

5. A report documenting the completion of Specification E.1 (g) shall be submitted by April 15, 1987. All raw data used to support the conclusions shall be included. The report shall be prepared under the direct supervision of and certified by a registered civil engineer or certified engineering geologist.

6. A report documenting the completion of Specification E.1 (b) shall be submitted by December 1, 1987. All raw data used to support the conclusions shall be included. The report shall be prepared under the direct supervision of and certified by a registered civil engineer or certified engineering geologist.

7. A report documenting the completion of Specification E.1 (d) and (e) shall be submitted by June 1, 1987. This may be included in the Groundwater Monitoring Plan as specified in Provision F.8 below. All raw data used to support the conclusions shall be included. The report shall be prepared under the direct supervision of and certified by a registered civil engineer or certified engineering geologist.

8. The Discharger shall submit an interim Groundwater Monitoring Plan which complies with Article 5 of Subchapter 15 and reflects all the hydrogeologic and groundwater quality information available to date for Executive Officer approval by June 1, 1987. The plan shall include a proposed list of indicator parameters and/or waste constituents for which water quality protection standards will apply for the groundwater. The proposed standards shall be tabulated and shall be based on either groundwater data from well(s) unaffected by the waste management units or by some other appropriate criteria. All raw data used to support the conclusions shall be included. The report shall be prepared under the direct supervision of and certified by a registered civil engineer or certified engineering geologist.

9. The Board or its authorized representative shall be allowed:

   a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of the Order;

   b. Access to and copy at reasonable times any records that must be kept under the conditions of the Order;

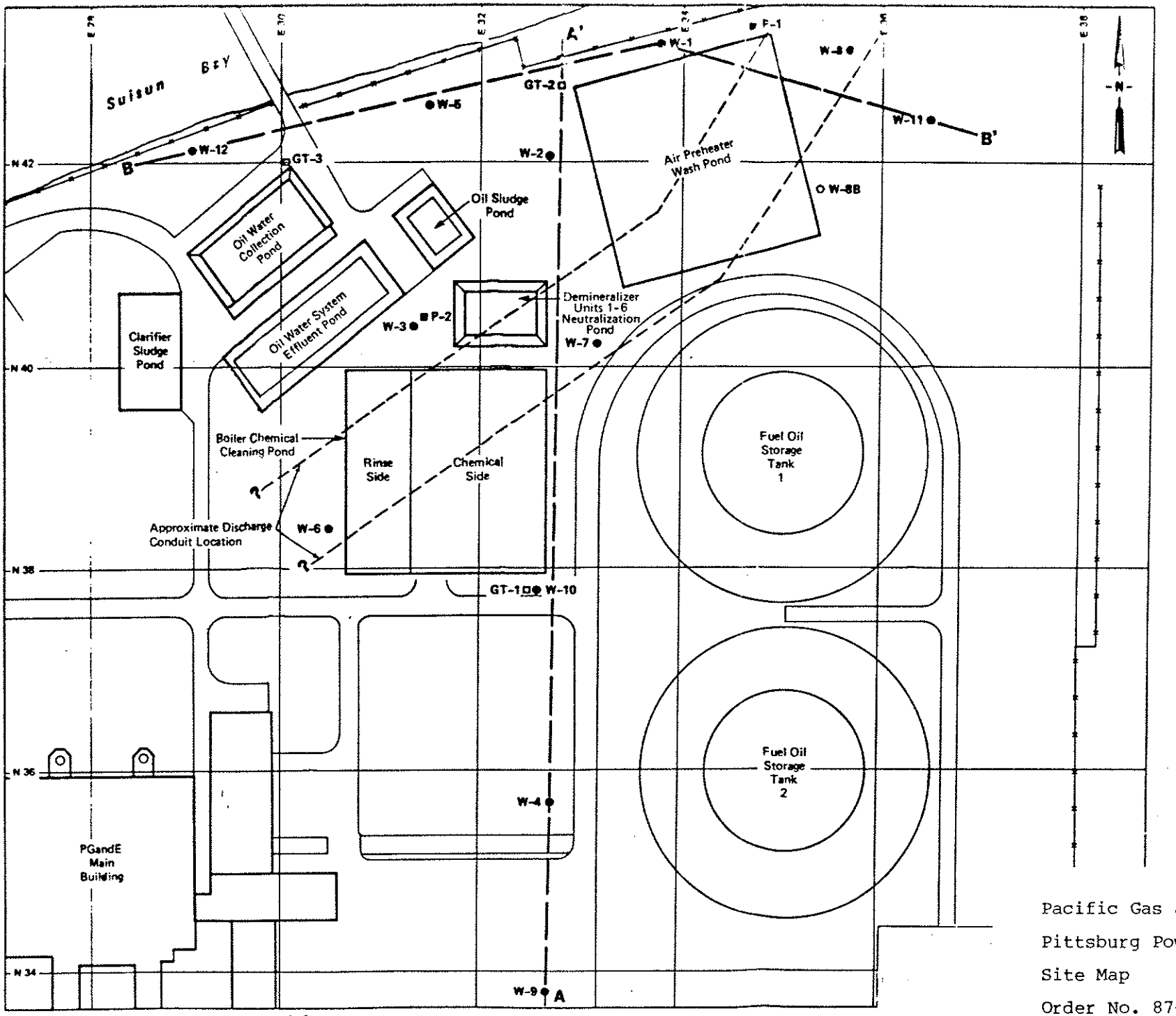
   c. To inspect at reasonable times any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under the Order; and

   d. To photograph, sample, and monitor at reasonable times for the purpose of assuring compliance with the Order.

I, Roger B. James, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by California Regional Water Quality Control Board, San Francisco Bay Region on March 18, 1987.

Roger B. James
Executive Officer

Attachments:
*Site Map
*Flow Scheme



Pacific Gas and Electric Company

Pittsburg Power Plant

Site Map

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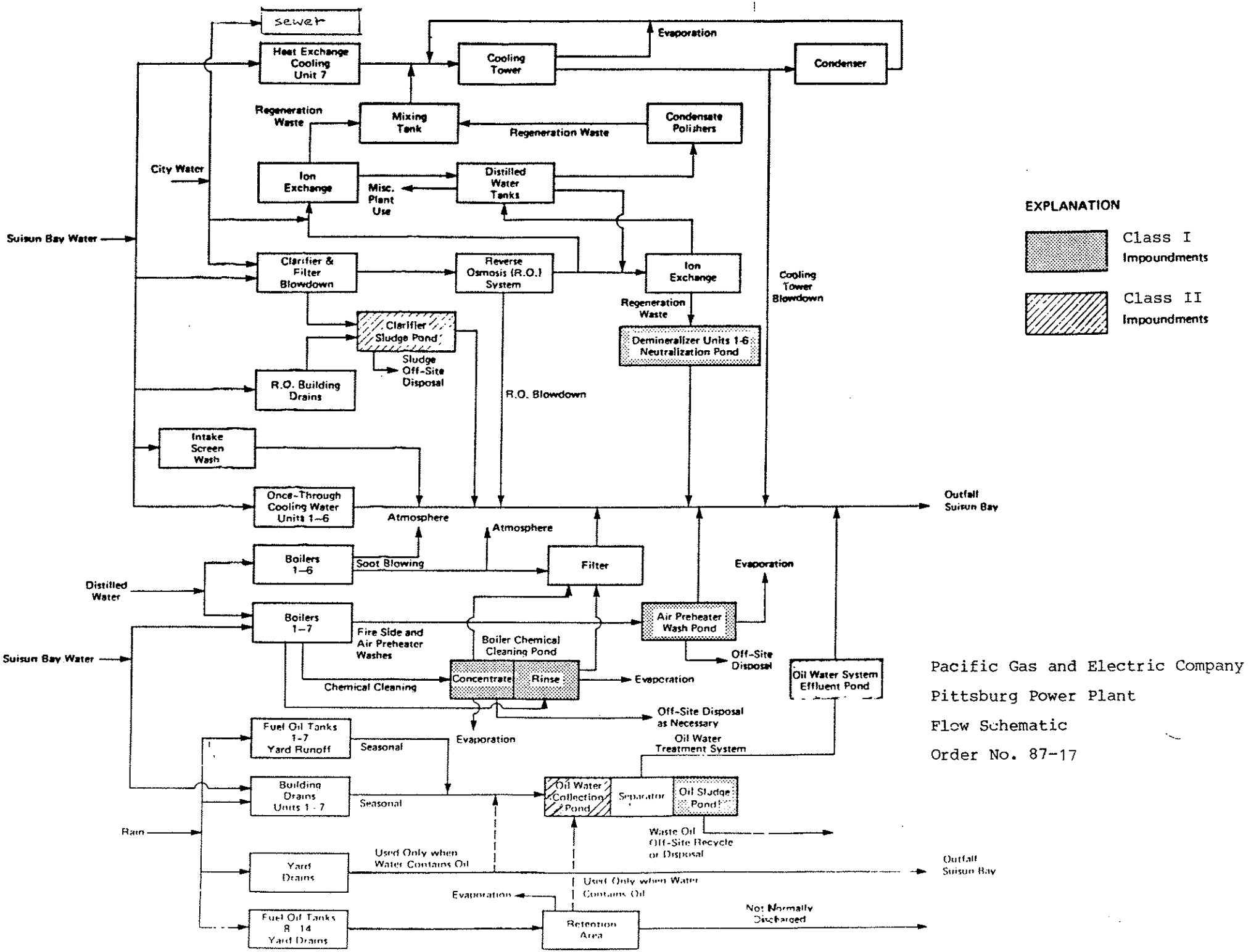

Pacific Gas and Electric Company

Pittsburg Power Plant

Flow Schematic

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